

Math 112
ReQuiz 07A

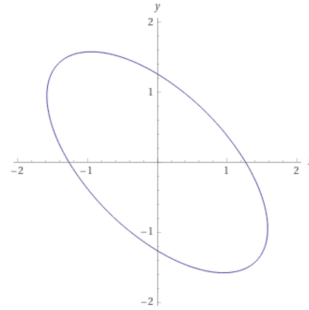
2022-04-03 (N)

Your name: _____

Exercise

(4 pt) Consider the ellipse graphed below, given by the equation

$$5x^2 + 6xy + 5y^2 = 8 \quad (1)$$



- (a) (1 pt) From the graph, the points $(x, y) = (\pm\sqrt{2}, \mp\sqrt{2}) \approx (\pm 1.414, \mp 1.414)$ appear to be on the ellipse. Prove this, algebraically.
- (b) (1 pt) From the graph, what do you predict about the slope of the tangent line to the graph at the point $(-\sqrt{2}, \sqrt{2})$?
- (c) (2 pt) Compute the rule of assignment for y' . (Your answer will involve both x and y .) Show that y' evaluated at the point $(x, y) = (-\sqrt{2}, \sqrt{2})$ equals 1. How does this relate to part (b)?